

Combo Circuit Lab

(uses lab equipment)

Learning Goals: Students will be able to:

- Analyze the differences between real circuits and the ideal ones,
- Build circuits from schematic drawings,
- Use a multimeter to take readings in circuits.
- Provide reasoning to explain the measurements in circuits.

Procedure:

1. Get three different resistors under 100Ω. Make a data table like the one given.
2. Measure the dead resistances with an ohmmeter and record.
3. Build the circuit given in Figure A. Set the DC power supply on about 3.0 V. Measure the voltage across each resistor and the power supply. Also measure the current through each resistor and the total current coming out the power supply.
4. Provide evidence that your table information is reasonable. Write down your reasoning and show your calculations. Before you take apart your experiment, show your results to your instructor to see if they are acceptable. Credit is given only if the results have limited error and your reasoning is sound.
5. Repeat the procedure with the circuit in Figure B.

Resistor	Measured resistance (ohms)	Current (amps)	Voltage (Volts)	Resistance in the circuit (ohms) $R=V/I$
1				
2				
3				
total	(Theoretical)			

Figure A

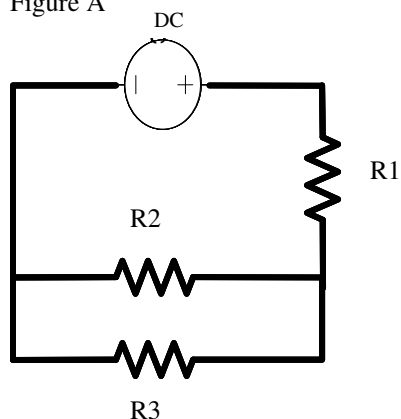


Figure B

